Module Title: 4E2 Biomedical Engineering Project

Code: ME4E2

Level: Senior Sophister (Mandatory module for students not continuing to Year 5)

Credits: 15

Co-Ordinator: Professor Richard Reilly

Supervisor: As agreed with Coordinator

Aims/Objectives
As part of the fulfilment of the final year module of the BAI, the students in the Biomedical Engineering streams are required to carry out an individual engineering project. To this end, each student is assigned a project topic and supervisor who will guide the course of the project throughout the academic year.

Syllabus
Projects are allocated in areas of research expertise and interest of members of the academic staff in the Trinity Centre for Bioengineering. The project content is decided by the supervisor for each individual project. Project assignments are made to students on the basis of the choice forms filled out at the end of the Junior Sophister year. The nature and content of the project is then discussed by supervisor and student in the first week of the first semester.

Learning Outcomes
On successful completion of project work, the students will be able to:
1. derive, apply and adapt solutions from the discipline specific knowledge gained in lectures and coursework, to a real world biomedical problem solving context;
2. experience independent enquiry and investigation of a practical biomedical engineering problem, clinical application or topic;
3. assess and criticise information, methods and results for a defined biomedical engineering purpose;
4. identify and formulate technical problems in such a manner as to make them amenable to clinical solution;
5. design a system, component or process to meet a specified biomedical goal;
6. analyse and interpret results from experiments conducted during the module of the design process in order to modify improve or explain the functionality of the system, component or process being created;
7. communicate effectively in technical and scientific writing, and to present scientific/technical ideas concisely to a technical audience that may not be expert in the specific domain of the presentation;
8. formulate the design of systems in terms of a schedule of intermediate goals that manifest in subsystems;
9. manage workflow and task scheduling within the constraints of resources and time given specific design goals and deadlines;
10. use industry standard hardware and/or software tools and codes of practice for all aspects of design including analysis and presentation;
11. examine and discuss the impact of the project design or theme on society.

Teaching Strategies
There are no formal timetabled hours associated with the project but students are expected to spend the time it takes to make reasonable progress and to keep in regular contact with their supervisors. It is recommended that students make a formal arrangement with their supervisors to meet on a weekly basis, preferably at a regular appointed time.

Assessment Mode(s)
The final year project is assessed by means of three submissions which will be marked by both the project supervisor and an assigned second reader. The combined submissions are marked out of a total of 150 marks. The submissions are as follows:

Project Summary: 10 marks
A five-page summary outlining the nature of the project and the work carried out to date as well as a plan of work for its completion must be submitted at the end of week 7 of the first semester.

Poster Session: 40 marks
It is intended that students complete work on their project by the end of week 6 of the second semester. During week 7 of this semester, when there are no scheduled lectures or tutorials students may prepare a poster on their project. A template will be provided for this purpose. Students display an A0 sized poster outlining the aims, technical content and accomplishments of their projects at a special session attended by supervisors, second readers and the external examiner. They give a short oral presentation at their poster and are then briefly questioned on it. This is then marked in confidence by the supervisor and second reader. This session will be scheduled for week 8 of the second semester. The poster must be submitted electronically at the end of week 7 of the second semester.

Typed Report: 100 marks
A full typed report on the project is submitted, which should not exceed 50 pages. This report should be properly structured and typed in accordance with instructions given. The report should contain an introduction outlining in detail the aims and objectives of, as well as some background information on the project. The bulk of the report should discuss in detail the main technical work carried out by the student with appropriate results, explanations and deductions. A final conclusion should comment on the overall outcome of the project. This is then marked by the supervisor and second reader according to established guidelines. A copy of the project marking sheet used is included in the handbook. Two soft-bound copies of the report must be submitted by the end of week 7 in the second semester.
**Plagiarism**
The college’s policy on plagiarism is outlined in section H of the College Calendar. There is no substitute to reading the regulations but here are a few of the key points:

Plagiarism arises from;
- copying another student’s work;
- enlisting another person or persons to complete an assignment on the student’s behalf;
- quoting directly, without acknowledgement, from books, articles or other sources, either in printed, recorded or electronic format;
- paraphrasing, without acknowledgement, the writings of other authors.

*It is the responsibility of the student to ensure that he/she does not commit plagiarism*

Plagiarism is serious whether the plagiarism is deliberate or has arisen through carelessness. Remember, the project dissertation must be your own piece of work and written in your own words. Where material is being repeated verbatim from published, web or other sources, you should use inverted commas, italics and/or present the material in a separate paragraph, to make it clear to the reader that you are quoting directly (and you must reference the source).